

Claims:

1. A solid/liquid interface (10) having a liquid facing surface (12), characterized in that the surface (12) comprises smooth (30) and non-smooth (16) structures, the non-smooth structures (16) arranged to maintain gas bubbles (18) proximate to the surface (12).
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2. The interface (10) according to claim 1, further characterized by bubble source means (22, 26, 32) arranged to produce bubbles (18) proximate to the surface.
- 10 3. The interface according to claims 1 or 2, wherein the non-smooth structures (16) comprise at least one protrusion (16) arranged on the surface (12) extending in a direction away from the surface.
- 15 4. The interface according to claim 3, wherein the at least one protrusion (16) extends at an angle (28) to the surface (12) thereby cooperating with the flat portions of the surface (12) so as to define a recess (20) arranged to maintain at least one bubble (18) proximate to the surface (12).
- 20 5. The interface according to claim 2, wherein the bubble source means comprises at least one gas feeding duct (22) arranged such that its outlet (32) is proximate to the surface (12).
- 25 6. The interface according to claim 5, wherein the bubble source further comprises a cavity (26) arranged between the feeding duct and the outlet (32) at the surface (12) so as to define a gas bleeding hole
7. The interface according any of the claims 1-6, wherein the surface (12) comprises a hard material including at least one of a metal, ceramic and composite.
- 30 8. A window in a pulsed spallation neutron source comprising the interface according to any of claims 1-7.
9. Use of a liquid submerged surface comprising the interface according to any of claims 1-7.

10..A liquid containing or directing structure comprising the interface according to any of claims 1-7.

5 11. A process for preventing cavitation erosion to a surface exposed to liquid, characterized by the steps of:

- a. introducing a plurality of bubbles proximate to the surface; and
- b. maintaining the bubbles on the surface.

10 12. The process according to claim 11, further comprising the steps of forming a non-smooth structure on the surface and arranging the non-smooth structure to capture the bubbles and maintain the bubbles on the surface.

15 13. The process according to claim 11, wherein the step of forming a non-smooth structure further comprises the step of forming a protrusion extending away from the surface and towards the liquid at an angle sufficient to form a cavity between the protrusion and surface of sufficient size so as to accommodate at least one bubble therein.

20 14. The process according to claim 11, wherein the step of introducing a plurality of bubbles further comprises the steps of:

- a. arranging a bubble source proximate to the surface; and
- b. forming a bubble passage from the bubble source to the surface, the passage having an outlet at the surface for introducing the bubbles.

25 15. The process according to claim 14, wherein the outlet comprises a bleeding hole.

16. The process according to claim 11, wherein the surface comprises one of a metal, ceramic and composite.